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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/679,487	10/04/2000	Srinath Hosur	TI-29755	7568

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EXAMINER

AHN, SAM K

ART UNIT	PAPER NUMBER
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2634

DATE MAILED: 12/05/2003

4

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/679,487

Applicant(s)

HOSUR ET AL.

Examiner

Sam K. Ahn

Art Unit

2634

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 October 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-37 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21, 23-26 and 28-37 is/are rejected.
- 7) ☒ Claim(s) 22 and 27 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☒ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Oath/Declaration

1. The oath or declaration is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEP §§ 602.01 and 602.02.

The oath or declaration is defective because: the benefit to a provisional priority, as claimed in the first page of the specification, is missing in the oath or declaration.

Specification

2. For the formality of the application under the present office practice, applicant(s) is required to replace "Claims" with "I or We Claim", "The Invention Claimed Is" (or the equivalent) before the Claims part of the specification of the instant application. See MPEP 608.01(m).
3. The disclosure is objected to because of the following informalities: On page 7, line 13, blocks 24 and 26 is not illustrated in figure 4, but in figure 3.

Appropriate correction is required.

Claim Objections

4. Claims 29-37 are objected to because of the following informalities:

The Office suggest replacing "The receiver ---" in claims 29-37, in line 1 of each claim to "The wireless receiver ---"

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 15 and 37 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In line 5 of each claim, recites the limitation "comma free codes". It is unclear as to what is meant by the limitation.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1-9, 10-12 14, 16-21, 23-26, 28-34 and 36 are rejected under 35

U.S.C. 102(e) as being anticipated by Ohnishi ('620).

Regarding claims 1 and 28, Ohnishi discloses a method and apparatus of a wireless receiver, operable in a W-CDMA environment (note col.1, lines 53-59) receiving a wireless communicated signal, wherein the signal comprises a first synchronization channel component. (see Fig.1) Ohnishi further teaches correlating a synchronization channel value to the signal to produce a plurality of correlation samples in response to a correlation between the synchronization channel value and the signal, (4 in Fig.5) comparing the plurality of correlation samples to a threshold (24), storing as a first set of correlation samples selected ones of the plurality of correlation samples that exceed the threshold and are within a first time sample period, wherein each of the correlation samples in the first set has a corresponding sample time relative to the first time sample period (27), and combining a second set of correlation samples (87, 88 in Fig.7) with the first set of correlation samples (26). (note col.4, line 10 – col.5, line 41)

Regarding claims 2 and 29, Ohnishi discloses all subject matter claimed, as applied to claim 1 or 28. Ohnishi further discloses the second set of correlation

samples within a second time sample period. (87,88 in Fig.7) where the further limitations are met as explained above. The second set of correlation samples were previously computed. (data 1, data 2)

Regarding claims 3 and 30, Ohnishi discloses all subject matter claimed, as applied to claim 2 or 29. Ohnishi further discloses the plurality of time slots where each of the plurality of time slots comprises a well-known synchronization channel component, and further where the durations of the samples periods are equal. (see Fig.1)

Regarding claims 4-8 and 32-34, Ohnishi discloses all subject matter claimed, as applied to claim 1, 3, 28 or 31. Ohnishi further teaches all limitation in regards to claim 3. And regarding the limitation of having M correlation samples from N correlation samples stored in a buffer, as the threshold level is adjustable and where the M correlation samples being stored depends on the samples exceeding the threshold level, the signal quality would determine the number of samples being stored. Moreover, it would also depend on the memory size as one skilled in the art would set the threshold level to be high when memory size is limited. Therefore, having M amount of correlation samples having one-half of N, or one-tenth of N, or less than N is inherent depending on the signal quality and threshold level set.

Regarding claims 9 and 31, Ohnishi discloses all subject matter claimed, as applied to claim 1 or 28. As explained earlier, Ohnishi further discloses combining first and second set.

Regarding claims 10-12, Ohnishi teaches all subject matter claimed, as applied to claim 1 or 9. As explained earlier, Ohnishi teaches combining the two sets of samples. Although Ohnishi does not explicitly disclose other methods of combining as recited in the claims, it would have been obvious to one skilled in the art and would be motivated to implement such well-known combining method for the purpose of resulting an effective results in analyzing the correlation results.

Regarding claims 14, 20, 21, 23-26 and 36, Ohnishi discloses all subject matter claimed, as applied to claim 1 or 28. Ohnishi further discloses a peak detector (83 in Fig.7) and determining a time position of the peak value. (see Fig.10)

Regarding claim 16, Ohnishi discloses all subject matter claimed, as applied to claim 1. Ohnishi discloses the wireless receiver comprising a user station wireless receiver. (see Fig.2)

Regarding claims 17 and 18, Ohnishi teaches all subject matter claimed, as applied to claim 1. As explained earlier, Ohnishi teaches system operating in W-

CDMA environment. Also, applicants disclose that W-CDMA includes receiving FDD and TDD wireless communicated signal. Therefore, it is inherent that the system taught by Ohnishi includes reception of FDD and TDD wireless communicated signal.

Regarding claim 19, Ohnishi teaches all subject matter claimed, as applied to claim 1. As shown in Fig.6, the sixth value is set as the threshold value, which may be lowered due to noise. Therefore, Ohnishi teaches measuring a level of noise and signal, and setting the threshold in response to the level of noise.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 13 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohnishi ('620) in view of Sarkar ('060).

Regarding claims 13 and 35, Ohnishi teaches all subject matter claimed, as applied to claim 1 or 28. However, Ohnishi does not teach energy measure of a result of the step of correlating a first synchronization channel value to the signal. Sarkar teaches, in the same field of endeavor, correlating received signal. Sarkar teaches calculating energy level between the synchronization channel

value to the signal. (note col.4, lines 11-23) Therefore, it would have been obvious to one skilled in the art to add the function of calculating energy level, as this result would give a good determination of signal quality.

Allowable Subject Matter

8. Claims 22 and 27 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

9. The following is a statement of reasons for the indication of allowable subject matter:

Present application discloses a wireless receiver comprising first and second set of correlation samples, correlating channel value to the received signal. The buffer stores only samples exceeding a threshold, in order to reduce the amount of data being stored and result in reducing complexity and memory size. Applicants further claim plurality of combined samples, combining first and second sets, to a second threshold, which is different to the first threshold, and further determine the peak value and the corresponding time position. Closest prior art, Ohnishi, teaches in the same field of endeavor, a wireless receiver storing samples exceeding a threshold. Ohnishi teaches all the subject matter claimed. However, Ohnishi does not teach where the combined samples are compared to a second threshold and further determine a peak value and its corresponding time position. Therefore, prior art does not teach all the limitation claimed.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Higuchi et al. and Sato teach spread spectrum receiver comprising correlators and storing correlated samples.

Nystrom et al. teach receiver receiving signals with PSC and SSC and correlating the received signals.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Sam Ahn** whose telephone number is **(703) 305-0754**.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Stephen Chin**, can be reached at **(703) 305-4714**.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
P.O. Box 1450
Alexandria, VA 22313-1450

or faxed to:

(703) 872-9306

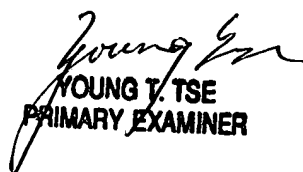
Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA., Sixth Floor (Receptionist).

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

Sam K. Ahn
11/26/03


YOUNG T. TSE
PRIMARY EXAMINER